

Thorectes kyliesi nov. sp., a new species from Granada (SE Spain) (Coleoptera, Geotrupidae, Geotrupinae, Geotrupini)

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Abstract: *Thorectes kyliesi* nov. sp. is described from Granada (Andalusia, Spain) and differences with related species are discussed. The new species is very close to *Thorectes angeli* López-Colón & Bahillo de la Puebla, 2024, *Thorectes lusitanicus* (Jekel, 1966), *Thorectes perezvalcarceli* López-Colón & Bahillo de la Puebla, 2023 and *Thorectes urbanoi* Hidalgo Fontiveros, 2025, although these species are clearly distinguished by the male's protibia and the aedeagus.

Key words: Coleoptera, Geotrupidae, Geotrupinae, Geotrupini, *Thorectes kyliesi* nov. sp., description, taxonomy, distribution, Iberian Peninsula.

Resumen: *Thorectes kyliesi* nov. sp., nueva especie de Granada (SE España) (Coleoptera: Geotrupidae: Geotrupinae). Se describe *Thorectes kyliesi* nov. sp. de Granada (Andalucía, España) y se discuten las diferencias con las especies próximas. *Thorectes kyliesi* nov. sp. es cercana a *Thorectes angeli* López-Colón & Bahillo de la Puebla, 2024, *Thorectes lusitanicus* (Jekel, 1966), *Thorectes perezvalcarceli* López-Colón & Bahillo de la Puebla, 2023 y *Thorectes urbanoi* Hidalgo Fontiveros, 2025, aunque estas especies se distinguen claramente por la protibia del macho y el edeago.

Palabras clave: Coleoptera, Geotrupidae, Geotrupinae, Geotrupini, *Thorectes kyliesi* nov. sp., descripción, taxonomía, distribución, Península Ibérica.

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Introduction

The genus *Thorectes* Mulsant, 1842 (Coleoptera, Geotrupidae) comprises 27 species with a circum-Mediterranean and Asian distribution: Turkey, Tajikistan, Nepal and northern India (NIKOLAJEV et al., 2016; LÓPEZ-COLÓN et al., 2025), being *Scarabaeus laevigatus* Fabricius, 1798 the type species of the genus (LÓPEZ-COLÓN & ALONSO-ZARAZAGA, 2006; ALONSO-ZARAZAGA et al., 2015; ICZN, 2018). In the Iberian Peninsula is now represented by 9 species: *Thorectes valencianus* (Baraud, 1966), *Thorectes lusitanicus* (Jekel, 1966), *Thorectes baraudi* López-Colón, 1981, *Thorectes ferreri* López-Colón, 1983, *Thorectes beturiensis* López-Colón & Bahillo de la Puebla, 2023, *Thorectes perezvalcarceli* López-Colón & Bahillo de la Puebla, 2023, *Thorectes angeli* López-Colón & Bahillo de la Puebla, 2024, *Thorectes urbanoi* Hidalgo Fontiveros, 2025 and the one hereby described (BARAUD, 1992; LÓPEZ-COLÓN & ROMERO SAMPER, 1996; PALMER & CAMBEFORT, 1997; LÓPEZ-COLÓN, 2000, 2003; VERDÚ et al., 2004; LÓPEZ-COLÓN & ALONSO-ZARAZAGA, 2006; CUNHA et al., 2011; ALONSO-

ZARAZAGA et al., 2015; NIKOLAJEV et al., 2016; LÓPEZ COLÓN & BAHILLO DE LA PUEBLA, 2023a, 2023b, 2024; HIDALGO FONTIVEROS, 2025).

The species of the genus *Thorectes* are medium-sized, black and quite or very convex, especially the males, with a very voluminous pronotum. They have a semicircular clypeus, not flattened anteriorly, fine or very fine elytral punctation, very scarce or practically nonexistent, without recognized alignment in striations, the apical dens of the anterior tibiae of the males are generally bifurcated [except *Thorectes ferreri* López-Colón, 1993, *Thorectes beturiensis* López-Colón & Bahillo de la Puebla, 2023 and some individuals specimens of *Thorectes lusitanicus* (Jekel, 1966)] and with particular denticulation on the infero-internal edge of the anterior tibiae.

Material and methods

To obtain the images that accompany this paper, serial photographs were taken at different focus planes using a Meopta laboratory microscope and a CMOS 5 digital camera. The photographs were subsequently stacked with Helicon Focus 8.2 software.

The material studied has been labelled as follows:

- **Holotypus:** 1 ♂, White label: Spain, Huétor-Santillan, Granada / 31-X-5-XI-2025 / Kylies lgt. / N 37,293347 W 3,454805. Red label: *Thorectes kyliesi* ♂ / Pucholt, Vašíček, López-Colón & Bahillo de la Puebla / HOLOTYPUS. The specimen will be kept in the collection of Entomology of Museo Nacional de Ciencias Naturales (Madrid).
- **Allotypus:** 1 ♀, White label: Spain, Huétor-Santillan, Granada / 31-X-5-XI-2025 / Kylies lgt. / N 37,293347 W 3,454805. Red label: *Thorectes kyliesi* ♂ / Pucholt, Vašíček, López-Colón & Bahillo de la Puebla / ALLOTYPUS. The specimen will be kept in the collection of Entomology of Museo Nacional de Ciencias Naturales (Madrid).
- **Paratypi:** 101 ♂♂ y 91 ♀♀, Same labels as the holotypus but with identification as PARATYPUS). The specimens will be deposited in the following collections: Petr Kylies, Pavel Pucholt, Ondřej Vašíček, David Král, Ladislav Mencl, J.I. López-Colón (2 ♂♂ and 1 ♀) and 1 ♂ and 1 ♀ in the collection of Entomology of Museo Nacional de Ciencias Naturales (Madrid).

Description

Thorectes kyliesi nov. sp.

Holotypus

Male. Total length: 14,0 mm. Convex and broad, black, shiny, without bluish lateral reflections (Fig. 1). Cephalic tubercle conical, strong, and rather raised; clypeus densely dotted; prominent cheeks. Upper edge of the mandibles sinuate (although in some paratypes this is not easily observed due to friction between specimens) (Fig. 2). Antennae as in Fig. 3.

Pronotum large, convex and transverse, especially in the male, without median depression on the anterior margin; the anterior angle obtuse; the base with a rim that disappears on each side of the middle; with a fairly dense, double superficial punctation, not only on the sides, but on the disc, with several depressions in the lateral region (Fig. 4).

Small, triangular, transverse scutellum, twice as wide as long, without dots (Fig. 5).

Elytra fused, with the lateral rim extended beyond the humeral calus and continued towards the scutellum reaching halfway along the basal edge; with faint but clearly visible punctation, not well aligned in the striations (Fig. 6). Epipleura very thick and continuous, reaching almost to the end of the elytron (Fig. 9).

Mesosternal process raised, small but evident (Fig. 7).

Abdominal sternites not punctate, glabrous, except at the apex and towards the sides (Fig. 8).

Front femora and mesofemora with anterior and posterior margins unarmed. Metafemora unarmed, without denticulation on the posterior margin, with the posterior line of dots entire and hairy (Fig. 9).

Anterior tibiae with the apical tooth forked (Fig. 10); second and third teeth very close together, consecutive; the latter slightly directed downwards; ventral surface of the tibiae concave and lower internal ridge with a denticulation formed by a continuous series of small teeth among which four stand out at the level of the base of the third and fourth external teeth, the first two of these four teeth are slightly larger (Fig. 11).

Brachypterous. Wings extremely reduced, 0.6 mm long (Fig. 14).

Aedeagus with a length of 3.7 mm. Markedly widened towards the middle, at the level of the basal region of the parameres; the central notch on the dorsal side of the phallobase very wide and long. The dorsal basal arch of the parameres very prolonged on the left side, directed towards the right side, with a very marked central thickening between both sides. Paramera with well-developed desclerifications on the mediodorsal margins. Apex of the right paramere denticulate on the inner face (Figs. 15-18).

Allotypus

Female. Total length: 15,0 mm. Similar to the male, but with the anterior tibiae of a different shape. Anterior tibiae with a simple, non-bifurcated apical tooth; the third external tooth in the same plane as the others; the ventral surface is completely unarmed, concave, while the denticulation of the lower internal ridge also has a series of teeth (Figs. 12-13).

Pronotum large, convex and transverse, but less so than in the male.

Variation of the length

Total length of Paratypes: ♂♂: 12,0-18,0 mm; ♀♀: 13,0-17,0 mm.

Etimology / Derivatio nominis

The new species is named after the entomologist Petr Kylies, colleague of the first author with whom he usually collects. Petr specializes on Scarabaeoidea dung beetles from Palaearctic region, mainly Geotrupidae, Aphodiidae, Rhysemini and Psammidiini.

Discussion

Taking into account the set of characters listed below, *Thorectes kyliesi* nov. sp. cannot be confused with the closest species *Thorectes angeli* López-Colón & Bahillo de la Puebla, 2024, *Thorectes lusitanicus* (Jekel, 1966), *Thorectes perezvalcarceli* López-Colón & Bahillo de la Puebla, 2023 and *Thorectes urbanoi* Hidalgo Fontiveros, 2025. Namely:

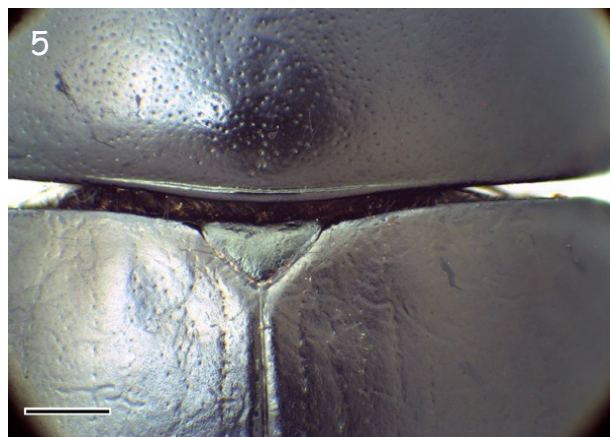
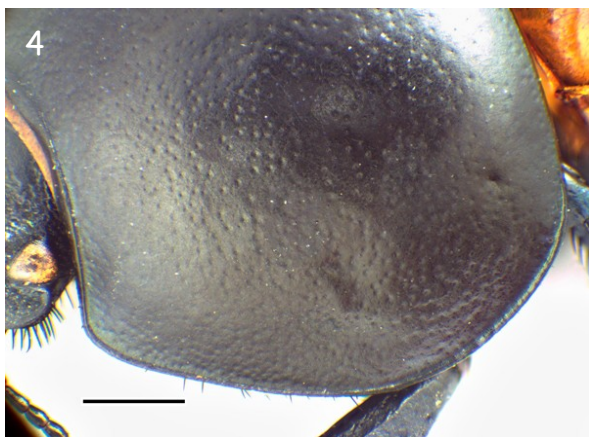
- Male's protibiae (Figs. 10-11).
- Aedeagus (Figs. 15-18).
- Pronotum with several depressions in the lateral region (Fig. 4).
- Elytra with the lateral rim extending beyond the humeral calus towards the scutellum (Fig. 6).
- Epipleura (Fig. 9).
- Mesosternum (Fig. 7).

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Figs. 1-6. - *Thorectes kylesi* n. sp.

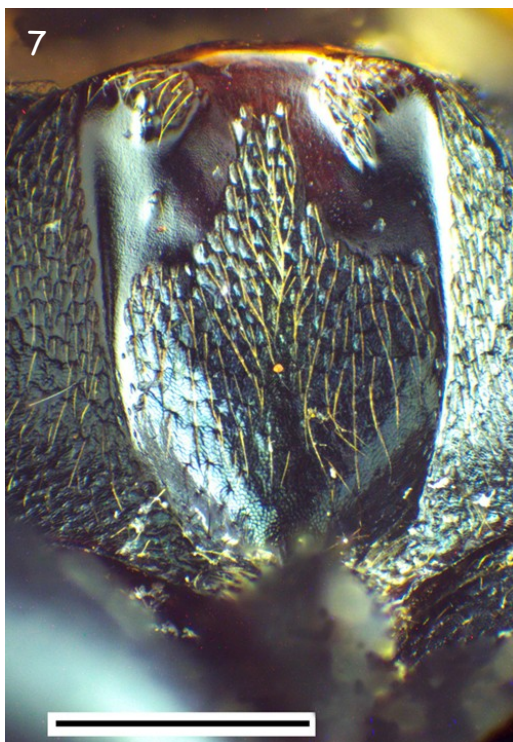
1. - Paratypus ♂. Habitus, dorsal view (scale 5 mm).
2. - Paratypus ♂. Head, dorsal view (scale 1 mm).
3. - Paratypus ♀. Antennae, dorsal view (scale 1 mm).
4. - Paratypus ♂. Pronotum, lateral view (scale 1 mm).
5. - Paratypus ♀. Scutellum, dorsal view (scale 1 mm).
6. - Paratypus ♂. Humerus of elytra and basal pronotum, angle view (scale 1 mm).

Figs. 7-9. - *Thorectes kylesi* n. sp. Paratypus ♂.

7.- Mesosternum (scale 1 mm).

8.- Abdomen (scale 1 mm).

9.- Metafemur and epipleura, ventral view (scale 1 mm).



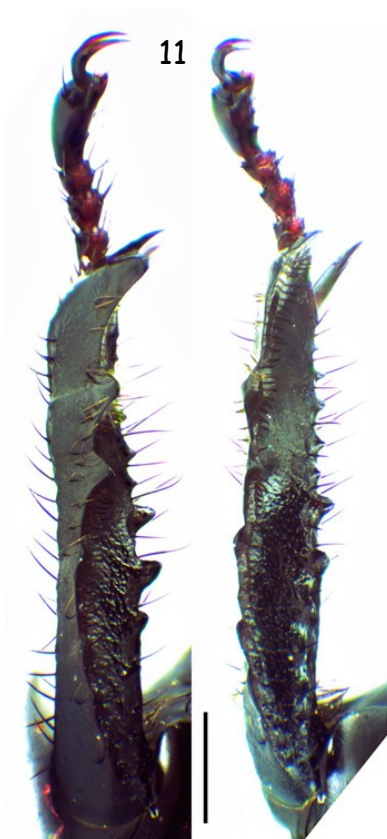
Figs. 10-13. - *Thorectes kylesi* n. sp.

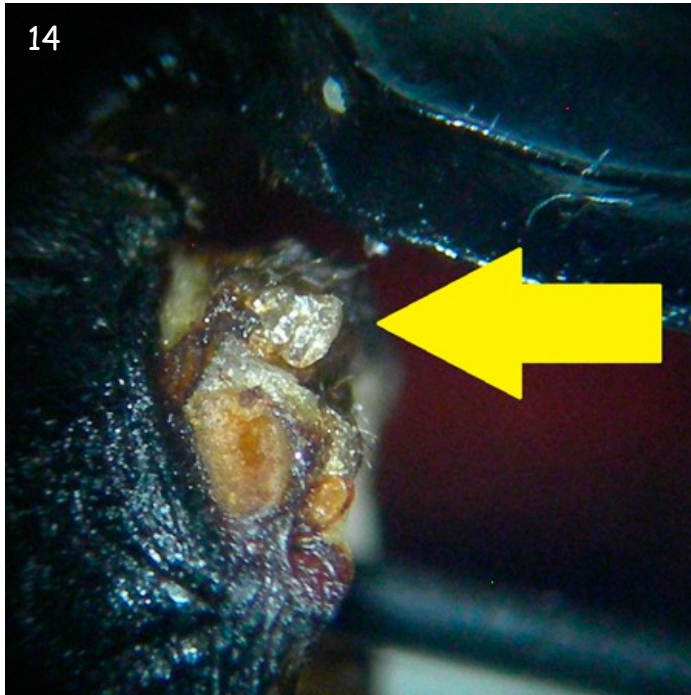
10.- Paratypus ♂. Front tibia, dorsal view (scale 1 mm).

11.- Paratypus ♂. Front tibia, lateral view in different angles (scale 1 mm).

12.- Paratypus ♀. Front tibia, dorsal view (scale 1 mm).

13.- Paratypus ♀. Front tibia, lateral view (scale 1 mm).





Figs. 14-20. - *Thorectes kylesi* n. sp.

14. - Holotypus ♂. Atrophied wing.

15. - Paratypus ♂. Aedeagus, dorsal view (scale 1 mm).

16. - Paratypus ♂. Aedeagus, right lateral view (scale 1 mm).

17. - Paratypus ♂. Aedeagus, ventral view (scale 1 mm).

18. - Paratypus ♂. Aedeagus, left lateral view (scale 1 mm).

19. - Holotypus ♂. First label.

20. - Holotypus ♂. Second label.

